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10/754,123	01/09/2004	James R. Bailey	2003-0270.02	8456

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EXAMINER	
TSAI, TSUNG YIN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/754,123	BAILEY, JAMES R.	
	Examiner	Art Unit	
	Tsung-Yin Tsai	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-19 and 21-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-19, 21-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAIL ACTION

Acknowledgment of the RCE received on 11/20/2007and made of recorded.

Acknowledgment of amending claims 1, 8-12, 14, 21 and 25.

Acknowledgment of canceling claims 7 and 20.

Acknowledgment of additional new claims 33-34.

Response to Arguments

Applicant's argument – Page 6-7 regarding claim 1 and 14 on limitation of tagging of detecting defect and determining of border of the target image region and tag generator.

Examiner's response – Denber teaches regarding tag generator (column 3 lines 40-67 to column 4 lines 1-25 disclose the generating of tag of for the defect, figure 2, column 1 lines 30-67, column 2 lines 1-10 discloses bitmap creation with the black and white pixel are creation of the tags. Location determination is also the tag creation. Denber teaches in abstract that the platen is first scan and an electronic image is generated and stored which contain information on the location of the dirt spot or inherent defect such as etch marks. This suggests that the "dirt spot" is tagged with information such as location and even compare to see if such markings that are detected are see as image analysis on the detected spot. Further step, taught by Denber, includes determine whether the spot lies wholly or partially with in any information area of the document image. This not only related about tagging the dirt spot regarding with information, but how it should be deal with as shown by figure 8A-

8D. Column 1 lines 65-67 disclose that information content is form from the scan) and border determination of the target (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels).

Applicant's argument – Page 7 regarding claim 8 and 21 ignoring section of the image scanning area as having a defect.

Examiner's response – Denber teaches in figure 2 part 38 where the function of XOR process is use to locate the are of defection and ignore areas with no defects. In this way the process will target only area where the defect is detected in the XOR process and will not waste resources and processing power to process regions that does not have processing.

Applicant's argument – Page 7 regarding claims 9 and 22 of autofitting the target image region to the image scanning area.

Examiner's response – Denber teaches in figures 7-8 and column 3 lines 45-68 to column 4 lines 1-25 where the target area is automatic process by the method of perimeter searching and spiraling clockwise processing.

Applicant's argument – Page 8 regarding Peairs and Xu not teaches regarding border determination.

Examiner's response – Denber teaches regarding border determination (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels).

Applicant's argument – Page 8 regarding claims 10 and 23 cloning the target image region to produce multiple target images over the image scanning area, based upon determining a border of the target image region that ignores the section of the image scanning area tagged as having a defect

Examiner's response – Peairs et al, in combine with Denber, in the same field of endeavor disclose wherein the section of the image scanning area tagged as having a defect is ignored in cloning the target image to produce multiple target images over the image scanning area (figure 1, figure 2, column 3 lines50-67 to column 4 lines 1-2. Office copier is the "cloner" that will output the multi image ignoring the defect area). When the defect area are ignore by the output of the cloner/printer, this will enable that all image/documents that are outputted are correct and without the defects.

Applicant's argument – Page 9 regarding claim 11 and 24 teaching recites enlarging the target image region to fit across multiple image scanning areas, based upon the border (of the target image region) determination.

Examiner's response – Denber teaches regarding border determination (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels) of the target image region (figure 2 step 38 disclose using of the XOR process to locate the target areas). Peairs et al teaches regarding enlarging of the area of interest in column 5 lines 30-50 of providing a larger offset of the defect regions.

Applicant's argument – Page 10 regarding claim 13 and 26 allowable by virtue of depending upon independent claims 1 and 14.

Examiner's response – Denber teaches all the limitation of claims 1 and 14, such that claims 13 and 26 are rejected as well by dependability.

Claim Rejections – 35 USC 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5-6, 8-9, 12, 14, 18-19, 21-22, 25, 27, 28, 29-30, 32 and 34 are rejected under 35 U.S.C. 102(b) as being unpatentable over Denber (US Patent Number 5,214,470).

Denber discloses the following method and apparatus (figure 1, column 2 lines 40-67):

(1) Regarding claims 1 and 14:

performing a defect calibration scan of an image scanning area (figure 2, column 1 lines 30-67. Scan is done with out the document in place. This is the defect calibration scan.);

analyzing data produced from the defect calibration scan to detect at least one defect in at least one section of the image scanning area (figure 2, column 1 lines 30-67. Creation of black and white bitmap is the result of the analysis.); and

generating a tag containing information representing the result of the defect detection for each section of the image scanning area having a detected defect (figure 2, column 1 lines 30-67, column 2 lines 1-10 discloses bitmap creation with the black and white pixel are creation of the tags. Location determination is also the tag creation. Denber teaches in abstract that the platen is first scan and an electronic image is generated and stored which contain information **on the location of the dirt spot or inherent defect** such as etch marks. This suggests that the "dirt spot" is tagged with information such as location and even compare to see if such markings that are detected are see as

image analysis on the detected spot. Further step, taught by Denber, includes determine whether the spot lies wholly or partially with in any information area of the document image. This not only related about tagging the dirt spot regarding with information, but how it should be deal with as shown by figure 8A-8D. Column 1 lines 65-67 disclose that information content is form from the scan);

determining a border (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels) **of a target image region** (figures 3-4 discloses the target image region of interest with defect) **within the image scanning area** (figure 2, column 1 lines 30-67. Scan is done with out the document in place. This is the defect calibration scan) **based upon the information in the generated tag** (figure 2, column 1 lines 30-67, column 2 lines 1-10 discloses bitmap creation with the black and white pixel are creation of the tags. Location determination is also the tag creation. Denber teaches in abstract that the platen is first scan and an electronic image is generated and stored which contain information **on the location of the dirt spot or inherent defect** such as etch marks. This suggests that the "dirt spot" is tagged with information such as location and even compare to see if such markings that are detected are see as image analysis on the detected spot. Further step, taught by Denber,

includes determine whether the spot lies wholly or partially with in any information area of the document image. This not only related about tagging the dirt spot regarding with information, but how it should be deal with as shown by figure 8A-8D. Column 1 lines 65-67 disclose that information content is form from the scan**).**

(2) Regarding claims 5 and 18:

further comprising automatically compensating for the defect based on information contained within the tag (figure 8a-8d, figure 7, figure 9, column 3 and 4. The spiral region technique is the method that take the given information and corrects it.).

(3) Regarding claims 6 and 19:

further comprising determining the nature of the defect by recursively dividing the section of the image scanning area tagged as having a defect into subareas and analysis each subarea in detail (figure 8a-8d, figure 7, figure 9, column 4 lines 1-10. The figures show that the defect in the area is divided. Pixel , which are the smallest division of the image, are than analysis one by one.).

(4) Regarding claims 8 and 21:

Wherein the border determining (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way

the border of the defect is found by the perimeter of these different color pixels**)** **comprising** ignore the section of the image scanning area tagged as having a defect (figure 2, figure 5, figure 6, column 2 lines 1-10, column 3 lines 55-65).

(5) Regarding claims 9 and 22:

further comprising autofitting the target image **region** to the image scanning area (figure 2, figure 5, figure 6, column 2 lines 1-10, column 3 lines 55-65) **based upon the border determination (**figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels**)**.

(6) Regarding claims 12 and 25:

further comprising smoothing over the section of the image scanning area tagged as having a defect if that section is determined to be included in the target image region (figure 2, figure 5, figure 6, column 2 lines 1-10, columns 3-4).

(7) Regarding claim 27:

wherein the analyzer and the tag generator are included in the image scanning device (column 3 lines 40-67 to column 4 lines 1-25).

(8) Regarding claim 29:

wherein the compensator is included in the image scanning device (column 3 lines 40-67 to column 4 lines 1-25, figure 8a-8d, figure 7, figure 9, column 3 and 4. The technique is the compensator).

(11) Regarding claim 32:

wherein the compensator is included in a host computer connected to the image scanning device (column 3 lines 40-67 to column 4 lines 1-25, figure 8a-8d, figure 7, figure 9, column 3 and 4. The compensator is within the hardware.).

(12) Regarding claim 30:

wherein at least one of the analyzer and the tag generator are included in a host computer connected to the image scanning device (column 3 lines 40-67 to column 4 lines 1-25, figure 8a-8d, figure 7, figure 9, column 3 and 4. All of the hardware are within the host processor.).

(13) Regarding claim 34:

further comprising a processor (figure 1 part 24 discloses an image processor that carries the process of figure 2), wherein the analyzer and border determine (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels) are performed by the processor (figure 1 discloses an image processor that carries the process).

Claim Rejections – 35 USC 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-4,10-11, 15-17, 23-24, 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denber (US Patent Number 5,214,470) in view of Peairs et al (US Patent Number 5,694,228).

Denber discloses all that is above except the following:

(1) Regarding claims 2 and 15:

wherein the defect calibration scan data is performed on the occurrence of at least one of the group of events comprising when the image scanning device is powered up upon request by a user, and periodically.

Peairs et al in the same field of endeavor disclose wherein the defect calibration scan data is performed on the occurrence of at least one of the group of events comprising when the image scanning device is powered up upon request by a user, and periodically (figure 1, figure 2, column 2 lines 5-20, column 3 lines 45-55).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber to scan the defect calibration scan data is performed on the occurrence of at least one of the group of events comprising when the image scanning device is powered up upon request by a user, and periodically. Such that tags database would be readily up-to-date and would be ready to be use any time that is requested.

(2) Regarding claims 3 and 16:

further comprising storing the tag.

Peairs et al in the same field of endeavor disclose further comprising storing the tag (figure 1, figure 2, column 2 lines 5-15, column 2 lines 35-40, column 4 table 1, figure 7, figure 9.).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber to further comprising storing the tag. Such that the detection will know the location and tags database would be readily up-to-date and would be ready to be use any time that is requested.

(3) Regarding claims 4 and 17:

further comprising repeating the steps of performing the defect calibration scanning, analyzing defect calibration scan data to detect for a new defect and a change in any previously detected defect, generating and storing a tag for each new detected defect, and updating the stored tag for each previously detected defect that has changed.

Peairs et al in the same field of endeavor disclose further comprising repeating the steps of performing the defect calibration scanning, analyzing defect calibration scan data to detect for a new defect and a change in any previously detected defect, generating and storing a tag for each new detected defect, and updating the stored tag for each previously detected defect that has changed (figure 1, figure 2, column 2 lines 10-20, column 3 lines 45-55. New defects are noted and their location and values are store and update to the tag database.).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber further comprising repeating the steps of performing the defect calibration scanning, analyzing defect calibration scan data to detect for a new defect and a change in any previously detected defect, generating and storing a tag for each new detected defect, and updating the stored tag for each previously detected defect that has change. Such that tags database would be readily up-to-date and would be ready to be use any time that is requested.

(4) Regarding claims 10 and 23:

Denber teaches regarding **based upon the border determination** (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the

center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels)

Denber does not teach regarding:

further comprising cloning the target image to produce multiple target images over the image scanning area.

Peairs et al in the same field of endeavor disclose wherein the section of the image scanning area tagged as having a defect is ignored in cloning the target image to produce multiple target images over the image scanning area (figure 1, figure 2, column 3 lines50-67 to column 4 lines 1-2. Office copier is the "cloner" that will output the multi image ignoring the defect area.).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber wherein the section of the image scanning area tagged as having a defect is ignored in cloning the target image to produce multiple target images over the image scanning area. Such would be the efficiency and faster way of making copies of the target image.

(5) Regarding claims 11 and 24:

Denber teaches regarding **based upon the border determination** (figure 7-8, column 3 lines 45-68 to column 4 lines 1-25 discloses where figure 7 teaches regarding finding the perimeter of the defect target using color differences of neighboring pixels outside of the defect as well as spiraling clockwise along the perimeter of the defect, this process will carry on until the

center of the defect is found, in this way the border of the defect is found by the perimeter of these different color pixels)

Denber does not teach regarding:

further comprising enlarging the target image **region** to fit across multiple image scanning areas.

Peairs et al in the same field of endeavor disclose wherein the section of the image scanning area tagged is having a defect is ignored in enlarging the target image to fit across multiple image scanning areas (figure 1, figure 2, column 3 lines50-67 to column 4 lines 1-2. Copier not only have the ability to copy, but also edit and change the image, in this case enlarging or blow up the image from original size.).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber wherein the section of the image scanning area tagged is having a defect is ignored in enlarging the target image to fit across multiple image scanning areas. Such would be a cumulative feature for the user who would want the flexibility and adaptability from one machine.

(6) Regarding claim 28:

Denber teaches all the subject matter above.

Denber does not teach regarding wherein the memory is included in the image scanning device.

Peairs et al in the same field of endeavor disclose wherein the memory is included in the image scanning device (figure 1, figure 2).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber wherein the memory is included in the image scanning device. Such that the design would be cumulative feature and such feature of including memory within would make the process faster.

(7) Regarding claim 31:

Denber teaches all the subject matter above.

Denber does not teach regarding wherein the memory is included in a host computer connected to the image scanning device.

Peairs et al in the same field of endeavor disclose wherein the memory is included in a host computer connected to the image scanning device (figure 1, figure 2).

It would have been obvious to one skill in the art at the time of the invention to employ Peairs et al teaching to Denber wherein the memory is included in a host computer connected to the image scanning device. Such that the design would be cumulative feature and such feature of including memory within would make the process faster.

5. Claims 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denber (US Patent Number 5,214,470) in view of Xu et al (US Patent Number 5,761,336).

Denber discloses all that is above except the following:

(1) Regarding claims 13 and 26:

Denber teaches all the subject matter above.

Denber does not teach regarding wherein the defect calibration scan is a low resolution.

Xu et al in the same field of endeavor disclose wherein the defect calibration scan is a low resolution (figure 1, column 4 lines 10-42, column 5 lines 65-67 to column 6 lines 1-10.)

It would have been obvious to one skill in the art at the time of the invention to employ Xu et al teaching to Denber wherein the defect calibration scan is a low resolution. Such the defect calibration scan will a quick update for the tag database and low resolution scanning would increase depth of focus providing superior defect detection and classification.

6. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denber (US Patent Number 5,214,470) in view of Sampath et al (US Patent Number 6,665,425 B1).

(13) Regarding claim 33:

Denber teaches regarding the apparatus (figure 1 discloses apparatus)

Denber does not teach regarding multifunction device having a printer and scanner.

However, Sampath et al teaches where this multifunction device having a printer and scanner (figures 2-7 disclose where the system comprises of printer and scanner, column 3 lines 45-68 discloses a multifunction device having a printer and scanner).

It would have been obvious to one skill in the art at the time of the invention to employ Sampath et al teaching to Denber regarding multifunction device having a printer and scanner, such the motivation to combine so all the part of the system can exercised appropriately to extract useful diagnostic information that will be same for all the part of the system, printer and scanner, for normal machine operation mode (column 3 lines 45-68 to column 4 lines 1-10).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tsung-Yin Tsai whose telephone number is (571) 270-1671. The examiner can normally be reached on Monday - Friday 8 am - 5 pm ESP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gauthier (US Patent Number 6,122,065) disclose apparatus and method for detecting surface defects.

Kinjo (USPG_PUB 2002/0015514 A1) disclose Image processing method.

Tsung-Yin Tsai
December 10, 2007

JINGGE WU
SUPERVISORY PATENT EXAMINER